

AMENDMENTS TO THE SPECIFICATION

Please amend the following paragraphs of the Specification as follows:

[0209] A lower plate 25 of the fourth embodiment has not only the function as a base material opposing member or blowoff port constituting member of the processing head 3 but also the function as a retaining member for the ground electrode. That is, as shown in FIGS. 15 and 18, a pair of shallow receiving recesses 25e are formed in a lower surface of the lower plate 25 with a common blowoff passage 25a sandwiched therebetween. The recesses 25e extend in the back and forth direction (i.e., a longitudinal direction). A ground electrode (i.e., second electrode body) 52A composed of an elongate thin metal conductive plate is fitted to each receiving recess 25e. Owing to this arrangement, the ground electrodes 52A are arranged in opposing relation (i.e., in an arranging direction orthogonal to the longitudinal direction) at the side (lower side, a first plasma generating surface) which is to be faced with the base material W of the electric field impressing electrode 51. Accordingly, the communication passages (i.e., gas passages along a passage direction orthogonal to the longitudinal direction and to the arranging direction) 20b between the two electric field impressing electrodes 51 and the lower plate 25 serve as the plasma discharge spaces, respectively.

[0217] That is, as shown in FIG. 19, the solid dielectric layer of the electric field impressing electrode 51 in the fourth embodiment is composed of a case 57 which is separately formed from the electrode main body (i.e., first electrode body) 56 instead of a thermally sprayed film 59 (FIG. 3) which is integrally thermally sprayed on the electrode main body 56. The case 57 includes a case main body (i.e., a dielectric first case body) 57a composed of ceramic (dielectric member) such as alumina and glass, and a lid 57b composed of the same material as the case main body 57a. The case 57 extends long in the back and forth direction (i.e., the longitudinal direction).

[0218] The case body 57a includes an internal space of the same configuration as the electrode body 56. The case main body 57a is open with a U-shaped cross section to a rear surface (surface on the opposite side to the opposing side of the other electrode 51) thereof. The electrode body 56 is removably received in the internal space of the case body 57a. As shown in FIG. 15, the dielectric case body 57a is provided with a protrusive end part 571 on a side of the opening thereof (i.e., the first opening defined by upper and lower protruded end parts). The protrusive end part 571 is protruded relative to the electrode body 56. The end surface of the protrusive end part 571 of the case body 57a is blocked with the lid 57b. Owing to this arrangement, the entire surface (including the first plasma generating surface) of the electrode body 56 is covered with the solid dielectric layer composed of the case 57.

[0253] The common dielectric case 70 comprises a single case main body 71 composed of a dielectric member, and two lids 74 composed of a dielectric member. The case main body 71 includes two case main body parts 72 (i.e., dielectric first case body 72 and dielectric second case body 72) horizontally extending long in mutually parallel relation, and a connection part 73 for interconnecting the opposite end parts (only the innermost side of the paper surface is shown in FIG. 28) of those main body parts 72. The rear surfaces on the opposite side to the opposing sides of those main body parts 72 are open with U-shaped cross section. After the electrode

metal main bodies 56 (*i.e.*, first electrode body 56 and second electrode body 56) are inserted in the main body parts 72 through those rear surface openings (*i.e.*, the first opening defined by upper and lower protruded end parts of first case body 72, and the second opening defined by upper and lower protruded end parts of second case body 72), the rear surface openings are covered up by the lids 74, respectively.

[0262] FIG. 29 shows a still further modified embodiment of a dielectric case. In this dielectric case 70A, the opposing plates 72b of two case main body parts 72 (*i.e.*, dielectric first case body 72 and dielectric second case body 72) are slanted so as to be approached to each other toward downward direction. Owing to this arrangement, the sectional area of the flow passage (*i.e.*, the gas passage) 70a is sequentially reduced toward downward direction. The internal space of each case main body 72 is slanted and the opposing surfaces of the two electrode main bodies 56 (*i.e.*, first electrode body 56 and second electrode body 56) are slanted so as to be approached to each other toward downward direction. Owing to this arrangement, the flow rate of the processing gas in the flow passage 70a and the state of plasma can sequentially be changed along the flowing direction (*i.e.*, the gas passage direction), and the surface processing recipe can be enriched. It may be constructed such that the flow passage 70a is gradually dilated along the flowing direction, depending on purposes.